Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form

1. Applying for (select one):

☒ (a) Prop 13 Urban Water Conservation Capital Outlay Grant

☐ (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant

☐ (c) DWR Water Use Efficiency Project

2. Principal applicant (Organization or affiliation): North of the River Municipal Water District

3. Project Title: Meter Installation Program

4. Person authorized to sign and submit proposal:

Name, title	William R. Miller, General Manager
Mailing address	4000 Rio Del Norte St., Bakersfield, CA 93308
Telephone	(661) 393-5411
Fax.	(661) 399-8911
E-mail	spock@lightspeed.com

5. Contact person (if different):

Name, title.	Tom Holson, Water Conservation Coordinator
Mailing address.	4000 Rio Del Norte St., Bakersfield, CA 93308
Telephone	(661) 393-5411
Fax.	(661) 399-8911
E-mail	tomhols@usa.com

6. Funds requested (dollar amount): $160,800

7. Applicant funds pledged (dollar amount): $10,139

8. Total project costs (dollar amount): $170,939

9. Estimated total quantifiable project benefits (dollar amount): $177,020

Percentage of benefit to be accrued by applicant: 100%

Percentage of benefit to be accrued by CALFED or others: 95%

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

10. Estimated annual amount of water to be saved (acre-feet): 138.41 AF

Estimated total amount of water to be saved (acre-feet): 2076 AF

Over 15 years 2076 AF

Estimated benefits to be realized in terms of water quality, instream flow, other: Reduced exports from the Delta – 1,972 AF; Instream flow

11. Duration of project (month/year to month/year): Oct 2002 – June 2004

12. State Assembly District where the project is to be conducted: 32

13. State Senate District where the project is to be conducted: 18

14. Congressional district(s) where the project is to be conducted: 21

15. County where the project is to be conducted: Kern

16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources: December 2000

17. Type of applicant (select one):
Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:

- ☐ (a) city
- ☐ (b) county
- ☐ (c) city and county
- ☐ (d) joint power authority
- ☒ (e) other political subdivision of the State, including public water district
- ☐ (f) incorporated mutual water company

DWR WUE Projects: the above entities (a) through (f) or:

- ☐ (g) investor-owned utility
- ☐ (h) non-profit organization
- ☐ (i) tribe
- ☐ (j) university
- ☐ (k) state agency
- ☐ (l) federal agency

18. Project focus:

- ☐ (a) agricultural
- ☒ (b) urban

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

19. Project type (select one):
Prop 13 Urban Grant or Prop 13 Agricultural Feasibility Study Grant capital outlay project related to:

- ☒ (a) implementation of Urban Best Management Practices
- ☐ (b) implementation of Agricultural Efficient Water Management Practices
- ☐ (c) implementation of Quantifiable Objectives (include QO number(s)

.....

- ☐ (d) other (specify)

.....

DWR WUE Project related to:

- ☐ (e) implementation of Urban Best Management Practices
- ☐ (f) implementation of Agricultural Efficient Water Management Practices
- ☐ (g) implementation of Quantifiable Objectives (include QO number(s))
- ☐ (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- ☐ (i) research or pilot projects
- ☐ (j) education or public information programs
- ☐ (k) other (specify)

.....

20. Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?

- ☐ (a) yes
- ☒ (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One
B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant; and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

_____	_____	_____
Signature	Name and title	Date

Proposal Part Two

Project Summary

North of the River Municipal Water District, located just north of Bakersfield in the Southern San Joaquin Valley, proposes installing 144 meters to commercial and multi-family accounts. NORMWD historically has not metered its customers. Engineering estimates and results of other studies prepared for agencies with similar characteristics (Fresno, Clovis) indicate that NORMWD will generate 24% water savings per meter installed. That translates into annual water savings of approximately 138 acre-feet, and 2076 total water savings. Approximately 95% of the District's water supply is surface water purchased from the Kern County Water Agency. The water originates from the State Water Project. Therefore, 95% of the total water savings from this project, or 1972 acre-feet, represents conservation yield that contributes to CALFED objectives, since it reduces exports from the Delta. The total cost to implement this project is $170,939. This project is locally cost-effective, with a cost-benefit ratio of 1.02. NORMWD is requesting $160,800 in grant funding in order to enable the District to proceed with this project. The net present value per acre-foot of water saved, based on the savings of water from the State Water Project, and the cost of this project to the State, is $88.

A. Scope of Work: Relevance and Importance

Nature, Scope and Objectives

North of the River Municipal Water District (NORMWD) is a small water district just north of Bakersfield. It serves about 5,500 persons on a retail basis and wholesales water to Oildale, an unincorporated community of about 35,000 people. Approximately 95% of the District's supply is surface water purchased from Kern County Water Agency (KCWA) and comes from the H.C. Garnett Water Treatment Plant. The water originates with the State Water Project.

NORMWD historically has not metered its customers. NORMWD does meter all new service connections, in compliance with state law. Approximately 77% of NORMWD's accounts are not metered, making it difficult to track water usage and conservation efforts. Recognizing that improved water use efficiency is a critical issue to the state of California, NORMWD would like to implement a meter installation program, beginning with its 123 unmetered commercial and multi-family customers, representing 144 meters. Studies conducted in similar areas, including the City of Fresno and the City of Clovis, show projected water savings of 24% per meter.

Statement of Critical Water Issues

The proposed project will contribute to CALFED objectives of increasing statewide water use efficiency. It will reduce the District's need to purchase water from KCWA that originates with the State Water Project. We estimate that this project will result

in 2076 acre-feet of conservation yield, 95% of which (1972 acre-feet) will result in reduced exports from the Delta. The project will also addresses Urban Best Management Practice (BMP) # 4 – Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections. NORMWD has been a signatory to the Urban MOU since November 2001. The project is also consistent with the District's Urban Water Management Plan, adopted in December 2000.

Finally, in addition to reducing local demand, and demand on water from the State Water Project, the project will also provide NORMWD with data and customer feedback. This is critical for the District to be able to assess the impact of a future meter installation program for its single-family customers, as funds may become available.

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

Methods, Procedures and Facilities

NORMWD proposes issuing an RFP to hire a qualified contractor to perform the actual meter installations. The selected contractor will perform all of the installations. NORMWD has commissioned its engineering contractor, Boyle Engineering, to prepare a cost estimate for the meter installations and to develop product specifications for the meters to be installed. The assessment made by Boyle Engineering study determined that the majority of the service lines will also need to be replaced when the meters are installed, due to their advanced age and deteriorating condition. Furthermore, many of the water lines are in alleys, and many service lines would be long. Therefore, Boyle Engineering estimated that the cost to install a ¾" or 1" meter will average $1100. The cost to install a 2" or 6" meter will average $1900. This includes construction and contract administration costs.

NORMWD proposes installing the types and quantities of meters as shown in the table below:

Type of Account	Number of Accounts	Meter Type	Number of Meters
Multi-Family	104	¾" or 1" meters	122
		2" meter	2
		6" meter	1
Commercial	19	¾" or 1" meters	19
		Total Meters	**144**

The selected contractor will provide NORMWD with documentation of each meter installed. To verify installation, and to ensure that the meter is operating correctly, NORMWD staff will inspect each meter. Once inspected, NORMWD will update its billing system with the meter number, and begin billing the metered connections with a commodity rate instead of at a flat rate. Studies from areas with similar characteristics, as well as a study for NORMWD conducted by Maddaus Water

Management, estimate that consumption will be reduced by 24% for each meter installed.

NORMWD will notify its customers that meters have been installed, and will use the meter installation as an opportunity to provide educational material to its customers regarding water usage and conservation opportunities. Customer feedback and concerns will be tracked, and used by NORMWD as part of its evaluation of a future expansion of the program to single family unmetered accounts.

Task List and Schedule

The task list and schedule for this project is shown below. All of the grant funds requested. Should be expended by the end of the second quarter of 2004 (June 30). Funding for all other tasks will be provided by NORMWD. The analysis and final report would be produced in June 2004.

Task	**Budget Amount**	**Funding Source**	**Schedule**
Award of Grant Funding			May 2002
Contract Executed			October 2002
Planning, design & engineering	$3000	NORMWD	October– December 2002
NORMWD RFP Process and Selection of Contractor	$1000	NORMWD	January - March 2003
Notification letter and customer education (60 x $1)	$60	NORMWD	January - March 2003
Meter installations $1100 x 71	$78,100	Requested Grant Funding	January – March 2003
Installation inspections by NORMWD staff 71 x 0.5hr x 28	$994	NORMWD	January – March 2003
Notification and customer education letter (63 x $1)	$63	NORMWD	April – June 2003
Meter installations $1100 x 70 plus $1900 x 3	$82,700	Requested Grant Funding	April-June 2003
Installation inspections by NORMWD staff 73 x 0.5hr x 28	$1022	NORMWD	April – June 2003
Monitoring, assessment and final report	$2000	NORMWD	June 2003- June 2004
Final project report	$2,000	NORMWD	June 2004
Total Project	**$170,939**		

Monitoring and Assessment

Monitoring and assessment will take place on several levels as follows:

1. Quantification of the number of meters installed on a monthly and quarterly basis, as well as for the program overall.
2. Quantification of the water savings based on the installation of meters and billing with commodity rates. This will be calculated based on an analysis of the total water consumption for NORMWD. By subtracting out the metered usage, the District can determine the total consumption from unmetered accounts and unaccounted for system losses. The District will assume a 10% unaccounted for system loss, in order to determine consumption from unmetered accounts. The District will use a base year, weather normalized, to establish the level of unmetered consumption. The District will analyze the change in annual total consumption for unmetered accounts following the meter installations, in order to determine the associated reduction in consumption or water savings. The District will weather-normalize the data in conducting its evaluation. The District will prepare a final report based upon its findings.
3. Evaluation of customer feedback. The District will track and monitor customer feedback resulting from the meter installations. This important feedback will be used to evaluate strategies for potentially expanding the meter installation program to single family unmetered accounts.
4. A copy of the final report will be made available to CALFED and to the California Urban Water Conservation Council for distribution.

Preliminary Plans and Specifications

The District's engineering contractor, Boyle Engineering, has developed specifications for the meters. Please see Attachment 1.

C. Qualifications of the Applicants and Cooperators

1. Resumes are attached for the proposed NORMWD project manager(s)
2. External Cooperators - NORMWD will select the best-qualified contractor to install the meters, based upon a competitive bid process.

Please see Attachment 2 for above resumes and qualifications.

D. Benefits and Costs

1. Budget Breakdown

Budget Category	Description	Cost	Total
a. Land purchase/Easement	N/A	0	
b. Planning/Design Engineering		$3,000	**$3000.00**
c. Materials/Installation	141 - ¾" or 1" meters @ $1100	$155,100	**$160,800.00**
	3 - 2" or 6" meters @$1900	$5700	
d. Structures	N/A	0	
e. Equipment Purchases/Rentals	N/A	0	
f. Environmental Mitigation/Overhead	N/A	0	
g. Construction/Admin/Overhead	RFP Process & Contractor Selection (20 hrs x $50/hr)	$1000	**$1123.00**
	Notification letters to customers ($1 x 123)	$123	
h. Project/legal/license fees	N/A		
i. Contingency	N/A	0	
j. Other	Installation Inspections (0.5 hr per meter x $28 x 144)	$2016	**$6016.00**
	Water Savings Analysis (40 hrs x $50/hr)	$2000	
	Final Report (40 hrs x $50/hr)	$2000	
		TOTAL BUDGET	**$170,939.00**

Budget Justification

The relatively high cost of the meter installations is due to a couple of reasons.

1. The age of the connections. The majority of these connections are over 50 years old. Boyle Engineering conducted site surveys and determined that most of the service lines are deteriorating to such an extent that they would need to be replaced when meters are installed.
2. Length of Service Lines. Many of the service lines are in long alleys, and so the service lines being replaced are very long. That increases the cost of meter installation.

Each meter will need to be inspected by District staff to verify the quality of the work and ensure that the meter is operating correctly prior to billing based on usage.

2. Cost-Sharing

NORMWD proposes a cost-share of $10,139.00. This represents 100% of all administrative, inspection and management costs associated with this project, as shown below.

Description	Unit Cost	Quantity	Requested Funding	Agency Contribution	Total
Planning, Design & Engineering	$3000.00	1		$3,000.00	$3,000.00
Meter Installs Per Meter 3/4" or 1"	$1,100.00	141	$155,100.00		$155,100.00
Meter Installs Per 2" or 6" meter	$1,900.00	3	$5,700.00		$5,700.00
Notification Letter to Customers	$1	123		$123.00	$123.00
Meter Inspections & Data Processing - NORMWD Staff (.5 hrs per unit x $28 per hour)	$14.00	144		$2,016.00	$2,016.00
NORMWD RFP Process and Contractor Selection (20 hrs x $50/hr)	$1,000.00	1		$1,000.00	$1,000.00
Monitoring and Assessment - Water Savings Analysis (40 Hrs @ $50/hr)	$2,000.00	1		$2,000.00	$2,000.00
Project Report	$2,000.00	1		$2,000.00	$2,000.00
		Total Project Cost	**$160,800.00**	**$10,139.00**	**$170,939.00**

3. Benefit Summary and Breakdown

1. Quantifiable Benefits

Benefit	Acre/Feet	$ Benefit (2001 Dollars)	Beneficiary
Total Water Savings	2076	$177,020	NORMWD, Customers, CALFED 95% (see below), Society
State Water Project Water Savings (95% of total)	1972		CALFED & Society
Reduced Energy Costs from Hot Water Savings		$124,000	Customers (Based on Maddaus Study) and associated State's power resources

2. Non-Quantifiable Benefits

Improve the Bay Delta ecosystem through the reduction in water diversions by NORMWD that originate with the State Water Project.	Beneficiary – All/Society
Information and feedback to help NORMWD promote and evaluate the impact of conservation programs.	Beneficiary – NORMWD and Customers
Information and feedback to help NORMWD assess impact of meter installation program throughout service area. However, ultimately, if this were pursued, it could lead to benefits to All/Society resulting from the water savings of additional installed meters.	Beneficiary – NORMWD and Customers.

Assessment of Costs and Benefits

Assumptions and Methodologies

1. Non-metered multi-family usage is estimated at 168,494 HCF per account. This assumes 24% higher usage for non-metered accounts than metered MF accounts (103,140 HCF/yr). The current non-metered usage is based on a proportionate estimate derived from existing metered MF accounts.
2. Annual water use for non-metered commercial accounts is assumed 24% higher than for metered accounts. Average metered usage per commercial account = 459AF/62 accounts = 7.40 AF (from Maddaus Water Management Study).
3. Estimated savings are 24% based on the Maddaus study. Assumed water savings of 15% on interior end uses expect leakage; 30% savings on leakage and exterior uses. The approximate overall savings are 24%. This is consistent with savings estimates from other similar areas (Fresno, Clovis).
4. Discount rate = 6%
5. 95% of NORMWD's supply is from KCWA, originates with the State Water Project (SWP), based on 2001 data.
6. Assumes 15-year meter life.
7. The avoided cost of the saved water is $135 A/F. This includes $96 A/F water cost, and $39 A/F pumping and distribution cost.
8. There is no benefit from avoided wastewater costs.
9. Energy benefits to customers based on study prepared for NORMWD by Maddaus Water Management.
10. NORMWD will have on-going operating expenses for the life of the meter of $10 per meter per year. This includes meter reading, billing, administration and periodic maintenance.

Projected Water Savings							
Current Annual Water Use for Targeted Non-Metered Multi-Family Accounts (HCF)	**Current Annual Water Use for Non-Metered Multi-Family Accounts (AF)**	**Current Annual Water Use for Non-Metered Commercial Accounts (AF)**	**Annual Use for the Targeted Non-Metered Accounts (AF)**	**Projected Annual Water Savings AF (24 % Savings)**	**Total Water Savings Over 15 Years (AF)**	**Annual SWP Water Savings (95% of total water savings) AF**	**State Water Project Water Savings Over 15 Yrs (95% of total water savings) AF**
17523376	402.28	174.42	576.70	138.41	2076.12	131.49	1972.32

See table (next page) for the assessment of costs and benefits for this project. The cost-benefit ratio is 1.02, making this project locally cost-effective for NORMWD.

The projected water savings that would result in conservation yield to CALFED/Society are those savings from the State Water Project. This is 95% of the total estimated water savings, or 1972 acre-feet. The net present value (NPV)/water saved (State Water Project savings only), based on the cost of this project to the State, is $88 per acre-foot.

Project Benefits						Project Costs					
Yr	# of Meters	Annual Water Savings (AF/Yr)	Annual Water Savings SWP	Avoided Costs ($135/AF)	Water Discounted Benefits NORMWD	Project Costs CALFED	Discounted Costs CALFED	Project Costs NORMWD	On-going Operating Expenses NORMWD	Discounted Costs NORMWD	Total Discounted Costs
1	144	138.41	131.49	$18,685.35	$17,564.23	$160,800.00	$151,152.00	$6,139.00	$1,440.00	$7,124.26	$158,276.26
2		138.41	131.49	$18,685.35	$16,510.38			$4,000.00	$1,440.00	$4,806.78	$4,806.78
3		138.41	131.49	$18,685.35	$15,519.75				$1,440.00	$1,196.04	$1,196.04
4		138.41	131.49	$18,685.35	$14,588.57				$1,440.00	$1,124.28	$1,124.28
5		138.41	131.49	$18,685.35	$13,713.25				$1,440.00	$1,056.82	$1,056.82
6		138.41	131.49	$18,685.35	$12,890.46				$1,440.00	$993.41	$993.41
7		138.41	131.49	$18,685.35	$12,117.03				$1,440.00	$933.81	$933.81
8		138.41	131.49	$18,685.35	$11,390.01				$1,440.00	$877.78	$877.78
9		138.41	131.49	$18,685.35	$10,706.61				$1,440.00	$825.11	$825.11
10		138.41	131.49	$18,685.35	$10,064.21				$1,440.00	$775.61	$775.61
11		138.41	131.49	$18,685.35	$9,460.36				$1,440.00	$729.07	$729.07
12		138.41	131.49	$18,685.35	$8,892.74				$1,440.00	$685.33	$685.33
13		138.41	131.49	$18,685.35	$8,359.17				$1,440.00	$644.21	$644.21
14		138.41	131.49	$18,685.35	$7,857.62				$1,440.00	$605.55	$605.55
15		138.41	131.49	$18,685.35	$7,386.17				$1,440.00	$569.22	$569.22
	144	**2076.15**	**1972.34**	**$280,280.25**	**$177,020.56**	**$160,800.00**	**$151,152.00**	**$10,139.00**	**$21,600.00**	**$22,947.28**	**$174,099.28**
										Cost Benefit Ratio	**1.02**

E. Outreach, Community Involvement and Acceptance

The proposed meter installation program will serve as a tool for the District to evaluate the impact of meter installations, assess customer response and educate its customers about conservation. Since this area has historically been unmetered and billed on a flat rate basis, there is a resistance on the part of customers to transition to metered usage with a commodity rate structure. The response of its customers to the proposed meter installations and transition from unmetered flat rate to metered rate commodity billing will be very important to the District.

The District is committed to implementing water conservation programs, and recently became a signatory to the Urban MOU, however it is challenging to promote water conservation programs and to evaluate the impacts of the conservation in an unmetered service area. The information gathered from this project will be used to assist the District to develop strategies and gauge the response of customers to a program to install meters at single-family residential accounts.

The project will create employment for the staff of the selected contractor for the duration of the meter installations.

Proposal Part Three

Matching Funds Commitment Letter

To be submitted if selected for funding

Resolution

To be submitted if selected for funding

Environmental Documentation

To be submitted if selected for funding

North of the River Municipal Water District

4000 Rio Del Norte Street • Bakersfield, CA 93308 • Office (661) 393-5411 • FAX (661) 399-8911

ATTACHMENT 1

Proposition 13 Grant Proposal and Application
Meter Installation and Metering with Commodity Rates

Boyle Engineering Letter

Drawing – Standard Water meter

Drawing – ¾" & 1" Standard Water Service

Property Survey for Meter Installation

BOYLE

5001 E. Commercenter Drive
Suite 100 (93309-1655)
P.O. Box 12030, Bakersfield, CA 93309-2030
TEL: (661)325-7253 • FAX: (661)395-0359
www.boyleengineering.com

William R. Miller, Manager
NORTH OF THE RIVER MUNICIPAL WATER DISTRICT
4001 Rio Del Norte
Bakersfield, CA 93308

February 25, 2002
BK-N02-001-02

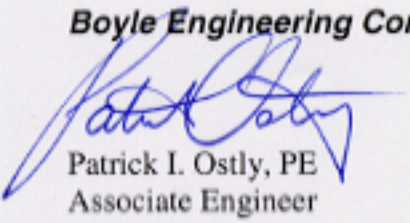
North of the River Municipal Water District
Proposition 13 Grant Proposal and Application
Meter Installation and Metering with Commodity Rates

Please find enclosed with this letter a list of the multi-family and commercial properties proposed for meter installation as described within the above referenced grant application. Meters, service lines, and appurtenances will be installed in accordance with the enclosed plates, as well as in accordance with the District's Standard Specifications.

If the District is successful in acquiring funding for this project we will then proceed to prepare the necessary contract bid documents, and otherwise commence with the project.

If you have any questions, please call.

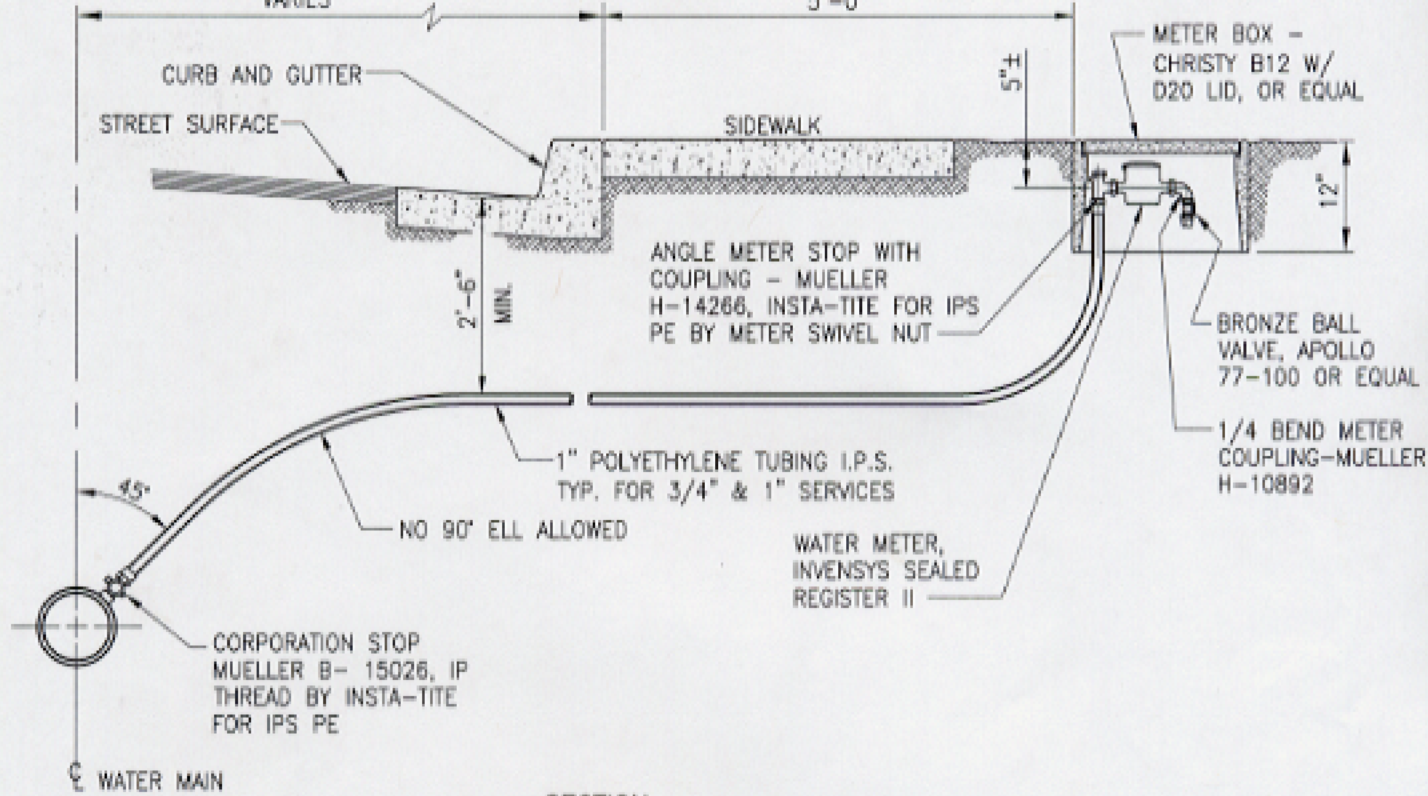
Boyle Engineering Corporation



Patrick I. Ostly, PE
Associate Engineer

Enclosed:
List of properties
Sheet W-2
Sheet W-3

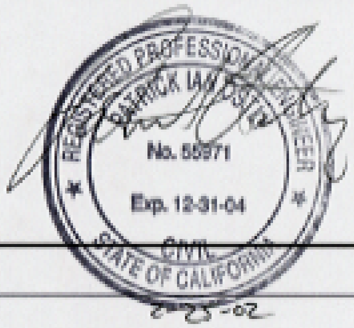
NORMWD LET 2-25-02.DOC



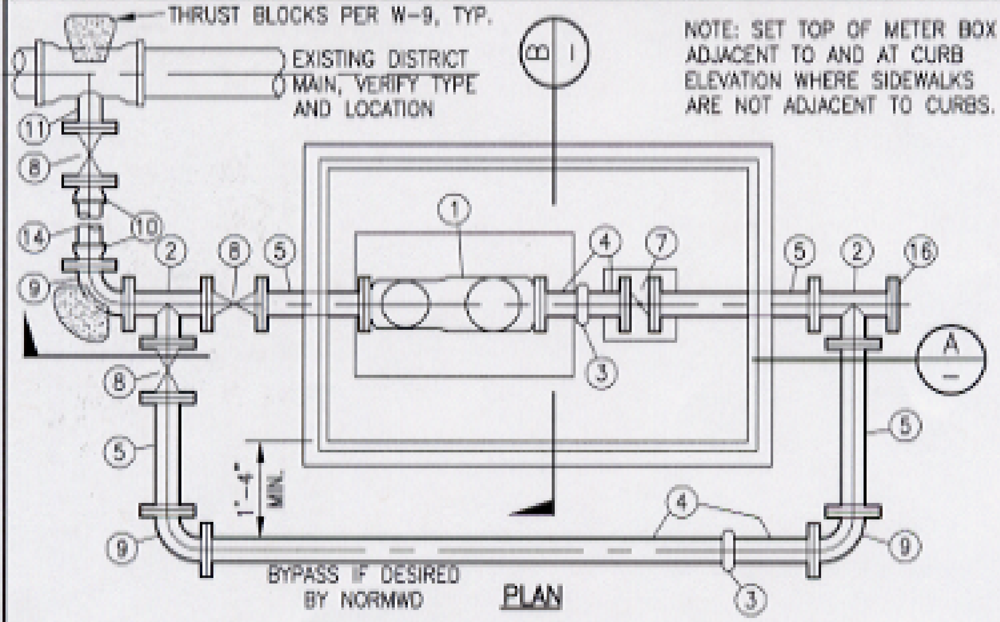
SECTION

GENERAL NOTES:

1. THE REQUIRED SIZE OF THE SERVICE MUST BE APPROVED BY THE DISTRICT.
2. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
3. METER BOXES SHALL BE CONSTRUCTED IMMEDIATELY BEHIND THE SIDEWALK WHERE SIDEWALKS ARE ADJACENT TO CURB.
4. IF METER BOX IS LOCATED ON A SLOPE NEXT TO A CURB OR SIDEWALK, A PROTECTIVE RETAINING WALL SHALL BE CONSTRUCTED.
5. CORPORATION STOP TAP SHALL BE MADE AS SPECIFIED BY THE PIPE MANUFACTURER'S INSTALLATION GUIDE. ALL DRY TAPS SHALL BE MADE WITH MACHINE WITH GUIDE OR PILOT FOR TAP.

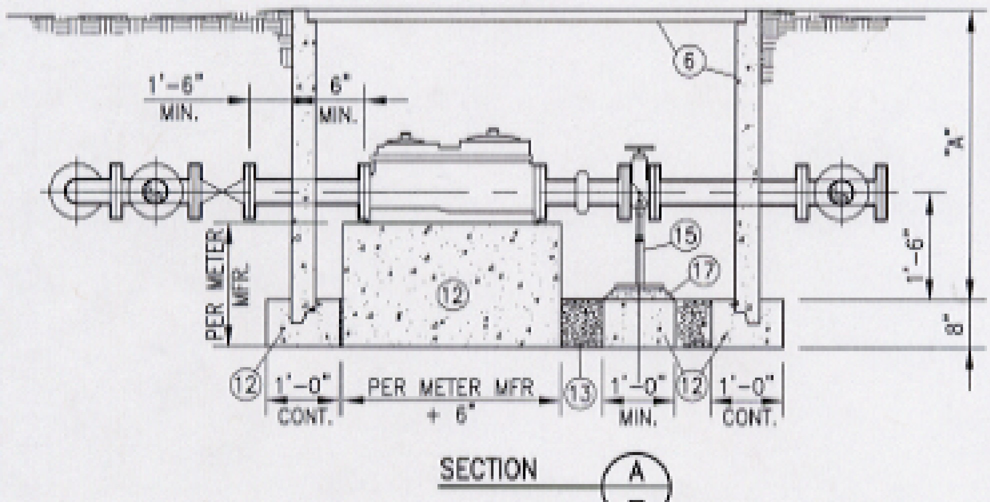


DATE	REVISION	NORTH OF THE RIVER MUNICIPAL WATER DISTRICT		
		3/4" & 1" STANDARD WATER SERVICES		
		BOYLE ENGINEERING CORPORATION	DATE DRAWN 2/02	SHEET NO. W-2

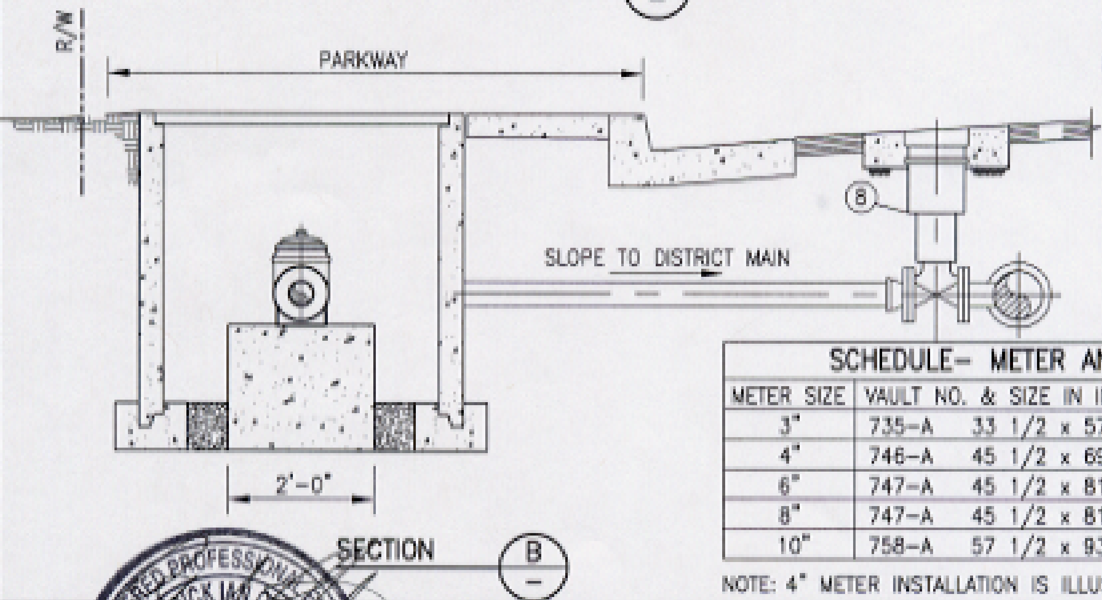


PLAN

NOTE: SET TOP OF METER BOX ADJACENT TO AND AT CURB ELEVATION WHERE SIDEWALKS ARE NOT ADJACENT TO CURBS.



SECTION A



SECTION B

MATERIAL LIST

1. COMPOUND METER, BADGER OR EQUAL
2. STANDARD WEIGHT STEEL TEE, FLG.x FLG.x FLG.
3. GROOVED COUPLING, VICTAULIC STYLE 77 OR EQUAL
4. STANDARD WEIGHT STEEL PIPE, FLG.x GROOVED END
5. STANDARD WEIGHT STEEL PIPE, FLG.x FLG.
6. PRECAST CONCRETE VAULT, GALVANIZED COVER WITH 7"x 14" READING LID, BROOKS PRODUCTS OR EQUAL
7. FLANGED GATE VALVE FOR 3" SERVICE, FOR 4" THRU 8" SERVICE USE FLANGED BUTTERFLY VALVE
8. GATE VALVE, FLANGED, WITH VALVE BOX
9. STANDARD WEIGHT STEEL 90' BEND, FLG.x FLG.
10. ADAPTER, FLG.x RT
11. CAST IRON TEE WITH FLANGED OUTLET
12. CLASS "A" CONCRETE SUPPORTS
13. CLASS II AGGREGATE BASE
14. POLYVINYL CHLORIDE PIPE, CLASS 150 FOR 4" THRU 10", USE SCHEDULE 40 FLANGED STEEL PIPE FOR 3" SERVICE
15. ADJUSTABLE PIPE SUPPORT, REQUIRED FOR 6", 8" AND 10" ONLY
16. BLIND FLANGE / CONNECTION
17. NON-SHRINK GROUT

NOTE: ALL STEEL PIPE SHALL BE FUSION BONDED EPOXY LINED AND COATED, 100% SOLID THERMOSETTING, APPLIED BY FLUIDIZED BED METHOD.

SCHEDULE– METER AND VAULT SIZES

METER SIZE	VAULT NO. & SIZE IN INCHES	DIMENSION "A"
3"	735-A 33 1/2 x 57 1/2	3'-3"±
4"	746-A 45 1/2 x 69 1/2	4'-0"±
6"	747-A 45 1/2 x 81 1/2	4'-0"±
8"	747-A 45 1/2 x 81 1/2	4'-0"±
10"	758-A 57 1/2 x 93 1/2	5'-3"±

NOTE: 4" METER INSTALLATION IS ILLUSTRATED ON THIS SHEET.

REGISTERED PROFESSIONAL ENGINEER
No. 55971
Exp. 12-31-04
CIVIL
STATE OF CALIFORNIA

DATE		REVISION
	2-25-02	

NORTH OF THE RIVER MUNICIPAL WATER DISTRICT

STANDARD WATER METER

DATE DRAWN	SHEET NO.
2-02	W-3

North of the River Municipal Water District

4000 Rio Del Norte
Bakersfield California 93308

Property Survey for Meter Installation

February 2002

123 Total Account Locations

- Denotes Locations Where Additional Meters Are Required

144 Total Meter Locations

Property Survey By Street

Residential Un-metered Accounts

Arvin Street

415 Arvin: 3 units One downstairs / upstairs apartment and one small house. One service off of easement between Arvin St. and Ray St. No access / backyard of 410 Ray.

142 Arvin: 2 units One Duplex. One service off of easement between Arvin St. and Francis St. Access in easement.

126 Arvin: 3 units (Inactive) Duplex in front and small house in rear. One service off of easement between Arvin St. and Francis St. Service is accessible through easement.

123 Arvin: 2 units Duplex. One service off of easement between Arvin St. and Francis St. Only access through yard.

115 Arvin: 5 units All rentals. Two known services, possible three. One service off of North Chester Alley and Arvin St. ; North East corner of property. One service in rear off of easement between Arvin St. and Ray St. May have one more service off of easement; need to locate. Access from alley or easement.

Ray Street

340 Ray: 2 units Duplex. One service off of easement between Ray St. and Arvin St. Access only through yard.

Linda Vista Drive

436 L/V: 2 units Duplex. One service located in easement between Linda Vista Dr. and Ray St. Access through easement.

344 L/V: 2 units Duplex. One service off of easement between Linda Vista Dr. and Ray St. Accessible.

314 L/V: 4 units Two duplexes. One service (possible two) off of easement between Linda Vista Dr. and Ray St. Accessible.

300 L/V: 3 units Three individual units. On in front, one on side, and one in rear. Two services off of easement between Linda Vista Dr. and Ray St. Accessible.

Hurle Avenue

1500 Hurle 4 units Four individual units. One service off of easement between Hurle Ave. and Haldon St. Accessible through easement.

Haldon Street

1505 Haldon 4 units One duplex in front and one upstairs / downstairs apartment in rear. One service off of easement between Haldon St. and Hurle Ave. Accessible.

1510 Haldon 3 units Three individual units. One service off of easement between Haldon St. and Wells Ave. Access only through yard.

1601 Haldon 4 units One duplex in front. Upstairs apartments in rear. One service off of easement between Haldon St. and Hurle Ave. Accessible.

1606 Haldon 2 units One upstairs / downstairs apartment. One service off of easement between Haldon St. and Wells Ave. Access only through yard.

Highland Drive

226 Highland 4 units Two duplexes. One service (possible two) off of easement between Highland Dr. and Douglas St. Access through easement.

134 Highland 2 units One duplex. One service off of easement between Highland Dr. and Douglas St. Access through easement

114 Highland 6 units Three duplexes. Two services off of easement between Highland Dr. and Douglas St. Access through easement.

Douglas Street

601 Douglas 104 units (North Park Apartments) One six inch main line runs from water main in easement to apartment complex. Lawyer checking on easement rights. (See Map)

525 Douglas 12 units Next to North Park Apartments. Share common mainline. Lawyer to check on easements (See Map)

China Grade Loop

449 China Grade Loop	2 units	Duplex
443	2 units	Duplex
437	2 units	Duplex
431	2 units	Duplex
425	2 units	Duplex
419	2 units	Duplex
413	2 units	Duplex
407	2 units	Duplex
401	2 units	Duplex
349	2 units	Duplex
343	2 units	Duplex
337	2 units	Duplex
331	2 units	Duplex
325	2 units	Duplex
319	2 units	Duplex
243	2 units	Duplex
239	2 units	Duplex
235 China Grade Loop	2 units	Duplex

Universe Avenue

221 Universe	2 units	Duplex
217	2 units	Duplex
213	2 units	Duplex
209	2 units	Duplex
205	2 units	Duplex
201	2 units	Duplex
121	2 units	Duplex
117	2 units	Duplex
113	2 units	Duplex
109	2 units	Duplex
105	2 units	Duplex
103 Universe	2 units	Duplex

North Chester Avenue

2700 N Chester 24 units Two services off North Chester alley between No. Chester Ave and Peerless Ave.

2716 N Chester 3 units One service off of Chester alley.

2800 N Chester 3 units One service off of Chester alley.

2808 N Chester 12 units Two services off of Chester alley.

2810 N Chester 3 units One service off of Chester alley.

2812 N Chester 3 units One service off of Chester alley.

3000 N Chester 3 units One service off of Chester alley.

3212 N Chester 4 units One service off of Chester alley.

3218 N Chester 4 units One service off of Chester alley.

3300 N Chester 4 units One service off of Chester alley.

3306 N Chester 4 units One service off of Chester alley.

3312 N Chester 4 units One service off of Chester alley.

3318 N Chester 4 units One service off of Chester alley.

3324 N Chester 4 units One service off of Chester alley.

3400 N Chester 4 units One service off of Chester alley.

3406 N Chester 4 units One service off of Chester alley.

3412 N Chester 4 units One service off of Chester alley.

3418 N Chester 4 units One service off of Chester alley.

3500 N Chester 4 units One service off of Chester alley.

3506 N Chester 4 units One service off of Chester alley.

3508 N Chester 3 units One service off of Chester alley.

3510 N Chester 4 units One service off of Chester alley. Common line with 3512 N Chester. Same owner.

3512 N Chester 4 units One service off of Chester alley. Common line with 3510 N Chester. Same owner.

3514 N Chester 3 units One service off of Chester alley.

3518 N Chester 6 units One service off of Chester alley.

3600/A N Chester 7 units One service off of Chester alley.

3600/B N Chester 7 units One service off of Chester alley.

Peerless Avenue

2801 Peerless 2 units Duplex. One service located in North Chester alley.

• 2803 Peerless 4 units All separate with separate addresses. Actual addresses are 2803,2805,2807,and 2809 Peerless Ave. Two services off of North Chester alley.

• 2811 Peerless 8 units Four duplexes. Two services off of North Chester alley.

• 2815 Peerless 6 units Three duplexes. Three services. One service per duplex. Services off of North Chester alley

• 2901 Peerless 6 units Two services off of North Chester alley.

• 2905 Peerless 6 units Two services off of North Chester alley.

2915 Peerless 2 units Actually two separate houses with two separate addresses. 2911 and 2915. One service of of North Chester alley.

• 2919 Peerless 4 units One duplex. One set of apartments. Possible two services / need to locate. Service off of North Chester alley.

2923 Peerless 2 units One service / need to locate. One service off of North Chester alley.

• 2927 Peerless 3 units Sheet shows three units but there are actually four. Possible two services / need to locate. Service(s) off of North Chester alley.

• 2931 Peerless 4 units One duplex in front. One apartment in rear. Possible two services / need to locate. Service(s) in North Chester alley.

Property Survey(continued)

3003 Peerless	4 units	One service off of North Chester alley.
3005 Peerless	4 units	One service off of North Chester alley.

Dina Way

2625 Dina	2 units	Two small houses. One service in easement at rear of property. Access through yard only.

Bedford Way

215 Bedford	4 units	One duplex and one upstairs / downstairs apartments. Two services; one for duplex and one for apartments. Accessible
110 Bedford	2 units	One duplex. One service in front of property. Accessible.

Brighton Way

100 Brighton	8 units	Service is in front of property and off of 4" wharf head hydrant located in front of property Need to relocate hydrant and upgrade service. Accessible.
119 Brighton	4 units	One duplex and one set of apartments. One service in front of property. Accessible.

Norris Road

300 Norris	2 units	Maggie's Café. One building with small apartment in rear. One service off of easement between Haldon St. and Well Ave. Accessible.
316 Norris	3 units	Three businesses in one building. One service off of main in front of property on Norris Rd Accessible.
330 Norris	6 units	One service off of easement between Haldon St. and Hurle Ave. Accessible.

Wells Avenue

1507 Wells	2 units	One duplex. One service off of easement between Wells Ave. and Haldon St. Access only through yard.
1505 Wells	2 units	One duplex. One service off of easement between Wells Ave. and Haldon St. Access only through yard.

Charlana Drive

512 Charlana	4 units	Four separate houses with separate addresses. Addresses are 512, 514, 508, and 510 Charlana. One known service possible two. Service off of lateral on west side of property. Accessible

Mc Cray Street

2017 Mc Cray	2 units	One duplex. Service also services the Little Green Store that is on the corner of Charlana Drive and Mc Cray St. If metered will have to separate Store from duplex? Service is located off of main line in apartment complex of 2033 Mc Cray. Accessible.
2033 Mc Cray	27 units	(See Map) Seven shut off valves located within complex.
2103 Mc Cray	5 units	One triplex and one set of upstairs apartments. One service in parking lot of Pepper Cove Apartments off of Mc Cray St. Accessible.

Commercial Un-Metered Accounts

All Accounts have one (1) unit and all locations are off main in alley on west side of property

1703 N Chester
1705 N Chester
1707 N Chester
1721 N Chester
1723 N Chester
1801 N Chester
1803 N Chester
1807 N Chester
1809 N Chester
1811 N Chester
1901 N Chester
1905 N Chester
1907 N Chester
1915 N Chester
2201 N Chester

212 China Grade Loop Road
220 China Grade Loop Road

506 Charlana

316 Norris Road

North of the River Municipal Water District

4000 Rio Del Norte Street • Bakersfield, CA 93308 • Office (661) 393-5411 • FAX (661) 399-8911

ATTACHMENT 2

Proposition 13 Grant Proposal and Application
Meter Installation and Metering with Commodity Rates

Qualifications of the Applicants and Cooperators

Resumes are attached for:

William R. miller, Manager, NORMWD

Tom Holson, Water Conservation Coordinator, NORMWD

Patrick I. Ostly, Associate Engineer, Boyle Engineering Company

WILLIAM R. MILLER
30601 Sheeptrail Court
Tehachapi, California 93561
(661) 821-0471

YEARS	TITLE	NAME OF ORGANIZATION
2002	Convener	California Urban Water Conservation Council
1993-Present 1997-Present	Member President	Bear Valley Community Services District; Board of Directors
1999-Present	Commissioner	Kern County Local Agency Formation Commission
1992-Present	General Manager	North of the River Municipal Water District
2001	Vice-Convener	California Urban Water Conservation Council
1987-Present 1996	Member President	California Special Districts Association (CSDA); Brd.Of Director
1993	Member	Assembly Local Government Committee; Budget Task Force
1997-Present	Board Of Directors	Association Of California Water Agencies (ACWA)
1996-Present	President	Kern County Special District Association (KCSDA)
1996-Present	Chairman	Urban Bakersfield Advisory Committee; KCWA
1996-1999	Project Principal	California Governance Consensus Project
1979-1991	General Manager	Templeton Community Services District

DATE	OTHER ACTIVITIES
1990	Environmental Technology And Public Policy Delegation To The Soviet Union
October 2001	Water Policy Delegation To Cuba

DATE	CONTINUED EDUCATION
April 2001	Special District Leadership Foundation;Certified As Special District Administrator
March 1982	State Of California/Department Of Health Services; Water Treatment Operator Certificate-Grade IV
May 1992	Association Of Records Managers And Administrators; Training
April 1993	American Society Of Civil Engineers; Earthquake Risk Reduction Utility Lifelines
October 1993	American Water Works Association/Cal-Nevada Section; Operator Training And C/T Compliance
August 1994	Tank Industry Consultants Inc.; Protective Coatings Training
May 1996	State Of California/Standardized Emergency Management System Training; Beginning And Intermediate

TOM HOLSON

2600-7 Barrington Street
Bakersfield, California 93309

Phone 661/827-1446

Cell 661/619-5449
TomHols@cs.com

EMPLOYMENT EXPERIENCE

Water Conservation Coordinator — **December, 2001- Present**
North of the River Municipal Water District — Bakersfield, California
Employed as a contractor to develop and implement Best Management Practices (BMPs) agreed to by the District becoming a signatory of the Memorandum of Understanding with the California Urban Water Conservation Council.

Water Board Director — **1990 - 1998**
North of the River Municipal Water District — Bakersfield, California
Served two years as president, assisted in hiring new manager, and resolved important District issues.

School Board Trustee — **1987 - 1992**
Standard Elementary School District — Bakersfield, California
Served two years as president, assisted in the hiring of new superintendent and maintained sound fiscal policies.

E. S. F.&H. Manager — **1979 - 1992**
Chevron Pipe Line Company — Bakersfield, California
Managed the Environmental, Safety, Fire, and Health compliance programs for Chevron Pipe Line company's California operations. Hired, trained, and supervised eleven employees. Ensured company's compliance with federal, state, and local E. S. F. & H. regulations. Was in charge of, and participated in, employee training programs. Retired in 1992.

District Gauger — **1953 - 1978**
Chevron Pipe Line Company — Bakersfield, California
Monitored crude oil and gasoline product movements in Company's California pipeline systems.

EDUCATION

Bakersfield College — Bakersfield, California
East Bakersfield High School — Bakersfield, California

REFERENCES AVAILABLE

Patrick I. Ostly, PE

Associate Engineer
Boyle Engineering Corporation

Fields of Special Competence	Water Distribution Systems, Wastewater Conveyance Systems, Storm Drainage System, Roadway Improvements, Utility Conflict Resolutions, Construction Management
Education	BS/Civil Engineering California Polytechnic State University, San Luis Obispo/1992
Registration	Civil Engineer/California (1996)
Years of Experience	Joined Boyle Engineering Corporation in 1993

Experience

Experienced in the planning, design and preparation of plans and specifications for public works projects including water transmission, pumping, storage, treatment and distribution, wastewater collection and treatment, and storm drainage systems. Experienced in contract administration for public works projects including the processing of contractor's correspondence, clarifications, requests for information, submittals, payment requests, change orders, and observation for construction contract compliance.

Design engineer for the Antelope Valley-East Kern Water Agency's "North Loop Pipeline and Pump Station" project at Edwards Air Force Base. Project consists of 4.3 miles of 20-inch steel watermain in existing developed roadways and a 5000 gpm bi-directional pump station. Provided construction administration services as project engineer during construction.

Design engineer for the Antelope Valley-East Kern Water Agency's "Forbes Avenue Improvements" project at Edwards Air Force Base. Project consists of 1.2 miles of curb, gutter, and road section improvements and one mile of 24-inch storm drain that parallel Forbes Avenue within an existing congested utility corridor.

Design and project engineer for the North of the River Municipal Water District's "Holson Well Improvements" project. The project included the well facilities, chlorination facilities, connection to existing water and storm drain facilities, and a concrete block building. Provided construction administration services for the project including bidding phase, construction observation, submittal review, contractor correspondence, requests for information, pay estimates, and change orders.

Design engineer for the City of Delano's Plant No. 4 Pump Station and Reservoir. Project. Project included a 2 million gallon steel reservoir, booster pump station, chlorination system, associated piping, and site grading. Construction services responsibilities included construction observation for contract compliance, shop drawing review and engineering support during plant startup.

Related Experience—continued

Resident engineer during the construction of the Kern Sanitation Authority's Phase 1 Digester Improvements and Kern Sanitation Authority's Miscellaneous Wastewater Treatment Plant Improvements. Major work items include a post-tensioned reinforced concrete digester, reinforced concrete structures, earthwork and subgrade preparation, piping, and mechanical and electrical equipment. Responsibilities included construction observation for contract compliance, addressing contractor correspondence, clarifications, change orders, and shop drawing review.

Resident engineer during construction of the City of Bakersfield's Ten Million Gallon Potable Water Reservoir. Project consists of the post-tensioned reinforced concrete reservoir, earthwork and subgrade preparation, leak detection system, inlet and outlet piping, site grading and drainage, and instrumentation modifications. Responsibilities included construction observation for contract compliance, addressing contractor correspondence, clarifications, shop drawing review, and pay estimates.

Resident engineer during construction of the Kern Delta Water District's Kern Island Headgate project. Project consisted of a sheet pile barrier, reinforced concrete headgate structure, and 125 feet of 84-inch reinforced concrete pipe. Responsibilities included construction observation for contract compliance, addressing contractor correspondence, clarifications, shop drawing review, and pay estimates.

Developed a preliminary engineering report addressing the contaminated potable water supply for the Community of Kernnita Park. Project engineer for the Community's annexation to East Niles Community Services District and design engineer for the subsequent pipeline improvements. Provided construction services including observation for contract compliance, shop drawing review, addressing contractor correspondence, and contractor payment.

Design engineer and performed construction observation for contract compliance for the Rosamond Community Services District's Assessment District No. 3 Improvements Project. Project included approximately 15 miles of sewer mains (6-inch through 48-inch), 14 miles of water mains (10-inch to 24-inch), 5 miles of 12-inch reclaimed water mains, three pump stations, and a 2 MG steel reservoir.